

V270 Motherboard

Mini-ITX Fan/Fanless SBC w/ VIA C7 NanoBGA2 processors, VGA, LCD, Giga Ethernet, Mini-PCI and PCMCIA Slot Interface.

USER MANUAL Version 1.0

FCC Statement



This device complies with part 15 FCC rules. Operation is subject to the following two conditions :

- This device may not cause harmful interference.
- This device must accept any interference received including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a class "a" digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at him own expense.

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Disclaimer

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Warranty

Our warranty that each of its products will be free from material and workmanship defects for a period of one year from the invoice date. If the customer discovers a defect, we will, at its option, repair or replace the defective product at no charge to the customer, provided it is returned during the warranty period of one year, with transportation charges prepaid. The returned product must be properly packaged in it's original packaging to obtain warranty service.

If the serial number and the product shipping data differ by over 30 days, the in-warranty service will be made according to the shipping date. In the serial numbers the third and fourth two digits give the year of manufacture, and the fifth digit means the month (e. g., with A for October, B for November and C for December).

For example, the serial number 1W08Axxxxxxx means October of year 2008.

Packing List

Before using this Motherboard, please make sure that all the items listed below are present in your package :

- V270 Motherboard
- V270 SBC User Manual
- HDD IDE Cable
- User's Manual & Driver CD

If any of these items are missing or damaged, contact your distributor or sales representative immediately.

Customer Service

We provide service guide for any problem as follow steps : First, visit the website of distributor to find the update information about the product. Second, contact with your distributor, sales representative, or our customer service center for technical support if you need additional assistance. You may have the following information ready before you call :

- Product serial number
- Peripheral attachments
- Software (OS, version, application software, etc.)
- Description of complete problem
- The exact wording of any error messages

In addition, free technical support is available from our engineers every business day. We are always ready to give advice on application requirements or specific information on the installation and operation of any of our products. Please do not hesitate to call or e-mail us.

Safety Precautions

◆ **Warning!**



Always completely disconnect the power cord from your chassis whenever you work with the hardware. Do not make connections while the power is on. Sensitive electronic components can be damaged by sudden power surges. Only experienced electronic personnel should open the PC chassis.

◆ **Caution!**



Always ground yourself to remove any static charge before touching the CPU card. Modern electronic devices are very sensitive to static electric charges. As a safety precaution, use a grounding wrist strap at all times. Place all electronic components in a static-dissipative surface or static-shielded bag when they are not in the chassis.

Safety and Warranty

1. Please read these safety instructions carefully.
2. Please keep this user's manual for later reference.
3. Please disconnect this equipment from any AC outlet before cleaning. Do not use liquid or spray detergents for cleaning. Use a damp cloth.
4. For pluggable equipment, the power outlet must be installed near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall could cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. **DO NOT COVER THE OPENINGS.**
8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient over-voltage.
12. Never pour any liquid into an opening. This could cause fire or electrical shock.
13. Never open the equipment. For safety reasons, only qualified service personnel should open the equipment.
14. If any of the following situations arises, get the equipment checked by service personnel:
 - A. The power cord or plug is damaged.
 - B. Liquid has penetrated into the equipment.
 - C. The equipment has been exposed to moisture.
 - D. The equipment does not work well, or you cannot get it to work according to the user's manual.
 - E. The equipment has been dropped and damaged.
 - F. The equipment has obvious signs of breakage.
15. Do not leave this equipment in an uncontrolled environment where the storage temperature is below -20° C (-4°F) or above 60° C (140° F). It may damage the equipment.

Revision History

Version	Date	Note	Author
1.0	2008.07.15	✓ First version	Tim Lai

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General Information

This chapter includes V270 Motherboard background information.

Sections include:

- Introduction
- Feature
- Motherboard Specification
- Function Block
- Board Dimensions

Chapter 1 General Information

1.1 Introduction

V270 SBC is equipped VIA VX700 All-in-One System Processor, is designed to enable high quality digital video streaming and DVD playback in a new generation of fanless, small form factor PCs and IA devices. The VX700 features the embedded VIA UniChrome™ Pro II 2D/3D MPEG-2, MPEG-4 and WMV9 video decoding acceleration, DDR2 533MHz support, dual-display support to ensure a rich overall entertainment experience. Outstanding connectivity features include USB 2.0, Giga LAN and ATA/133.

In peripheral connectivity, V270 SBC with flexible I/O ports, as one PCMCIA slot, Mini-PCI, four serial ports, one PATA connector, one SATA II connector, and six Hi-Speed USB connectors.

Thus, V270 SBC is designed to satisfy most of the applications in the industrial computer market, such as Gaming, POS, KIOSK, Industrial Automation, and Programmable Control System. It is a compact design to meet the demanding performance requirements of today's business and industrial applications.

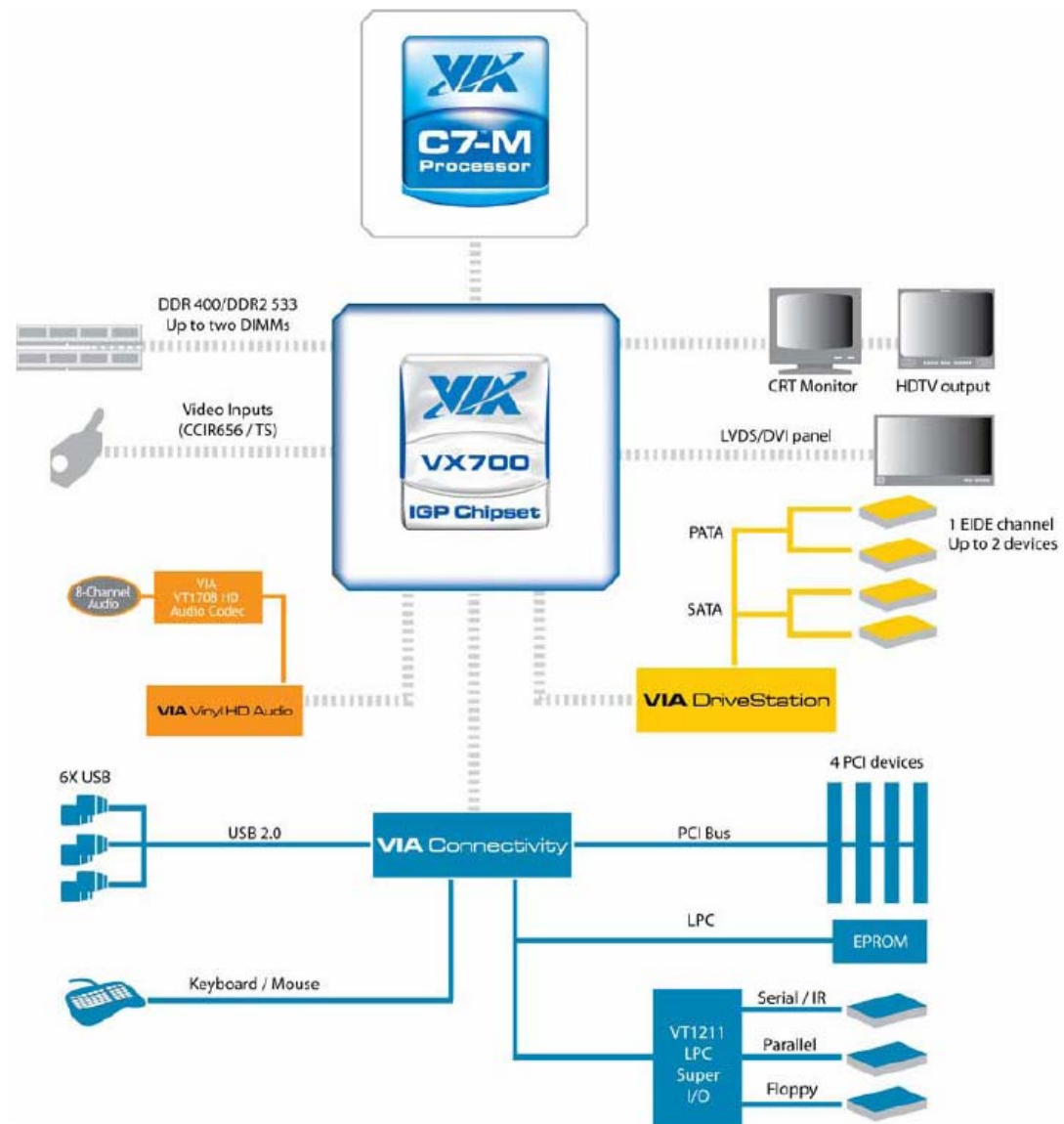
1.2 Feature

- Mini-ITX Form Factor (170mm x 170mm)
- Onboard VIA C7-M ULV/ C7-M NanoBGA2 processors, up to 1.6GHz
- 1 x DDR2 533 MHz SO-DIMM supporting up to 1GB
- Integrated VIA VX 700 Chipset
- VIA UniChrome Pro II AGP graphics with MPEG-2 / 4, WMV9 decoding acceleration
- Realtek RTL8110SC Gigabit Ethernet
- VT1708A High Definition Audio Controller, up to 8 high definition audio channels.
- 1 x PCMCIA slot, 1 x Mini PCI slot, 4 x COM, 6 x USB2.0,
- 1 x 40 pins IDE, 1 x SATA II,
- Graphic Output : 1 x VGA, 1 x S-Video(Optional), 1 x LVDS(or DVI)

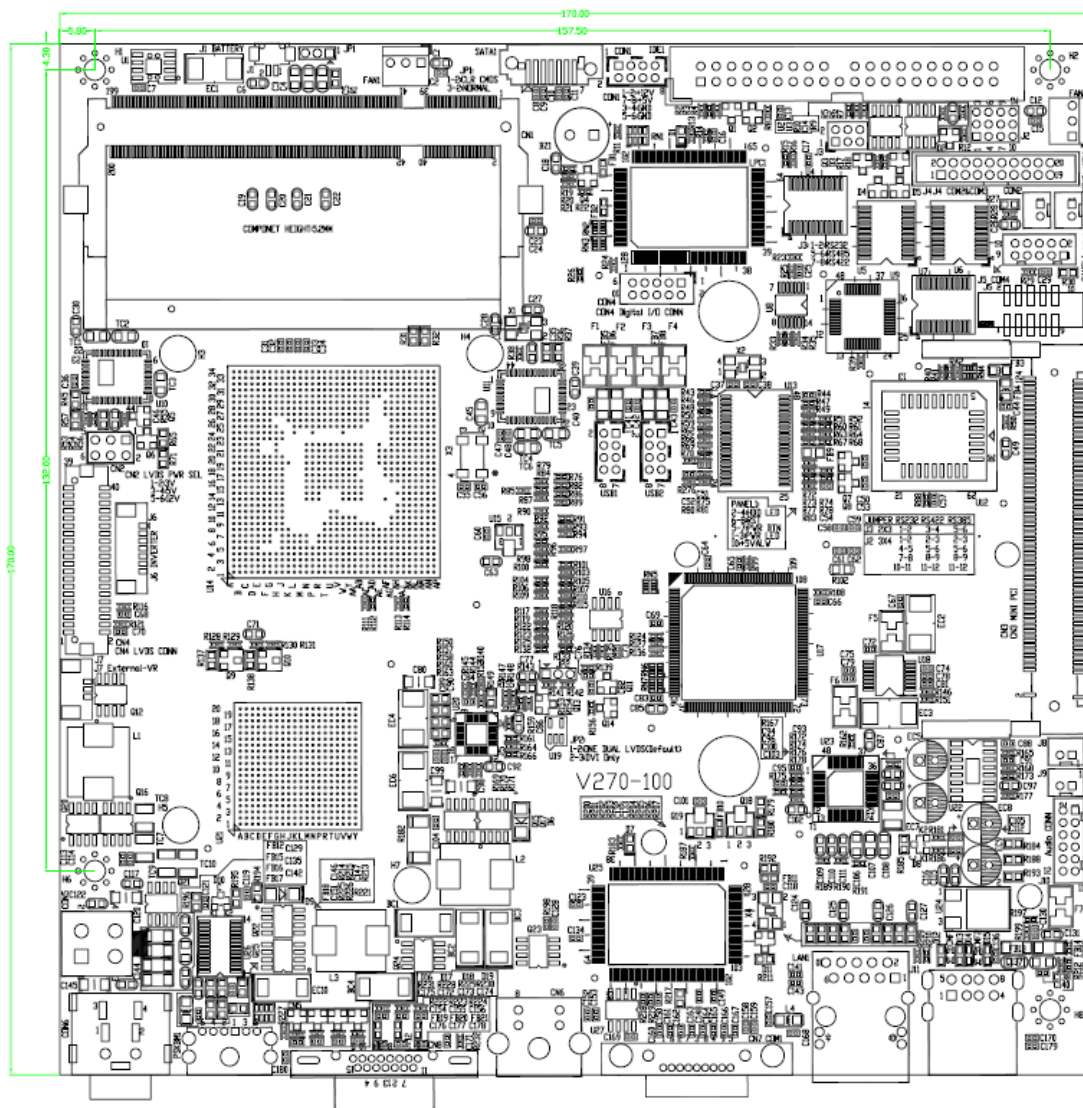
1.3 Motherboard Specifications

CPU Type	Onboard VIA C7-M ULV/ C7-M NanoBGA2 processors, up to 1.6GHz
CPU FSB	400 MHz / 800 MHz
CPU Socket	Onboard VIA NanoBGA2 package
Chipset	VIA VX 700
BIOS	AMI 8Mbit Flash
VGA	VIA VX 700 integrated VIA UniChrome™ Pro II Graphics Engine Up to 128MB shared with system memory
LVDS	Built in single- or Dual-channel LVDS, support up to 1600 x 1200, 24bit
LAN	1 x Giga LAN (Realtek RTL8110SC Controller)
Memory Type	1 x DDR2 SODIMM socket, supports up to 1GB DDR2 533 SDRAM
LPC I/O	Winbond W83627EHG integrated hardware monitoring
Keyboard/Mouse	1 x Mini-DIN connector supports PS/2 Keyboard/Mouse connectors
IDE Interface	Dual channels; supports Ultra DMA 33/66/100
Sound	VIA VT1708A (Line-in, Line-out, Mic in)
USB	6 ports, USB 2.0 (2 x USB Connector, 4 x USB pin-header)
Serial	4 serial ports(1 x RS-232/422/485 Connector, 3 x RS-232 pin-header)
Edge Connectors	1 x 12V DC-IN Jack 1 x Mini-DIN PS/2 connector for keyboard/mouse 1 x VGA out connector 1 x S-Video Connector (Optional) 1 x DB9 for COM1 (RS-232/422/485) 1 x RJ-45 for Gigabit LAN 2 x USB 2.0 ports
On Board Pin-Header Connectors	1 x 40 pins box-header 1 x 10pins pin-header for Front Panel 1 x 3pins pin-header for CPU Fan 1 x 3pins pin-header for System FAN 1 x 8pins pin-header for 5V/12V external power 1 x 2pins pin-header for 5V external power 1 x 2pins pin-header for 12V external power 1 x 4pins ATX 12V connector 2 x 2pins pin-header for Front Audio (with Amp.) 1 x 12pins pin-header for Front Audio 2 x 8pins pin-header for USB 3/4/5/6 1 x 20pins pin-header for COM 2/3 1 x 10pins pin-header for COM 4 1 x 40pins DF13 Connector for LVDS 1 x 3pins digital panel backlight brightness controller 1 x 7pins digital panel backlight controller 1 x 10pins pin-header for Digital IO
Power Connector	Input: Din-4Pin DC 12V Power input
Expansion Slots	1 x PCMCIA type II, 1 x Mini-PCI
Form Factor	Mini-ITX
Dimensions	170mm x 170mm
Mechanical & environmental	Operating temperature: 0 deg. C to 60 deg. C Operating Humidity: 30 ~ 90% Relative humidity, non-condensing Certification: CE, FCC, RoHS

1.4 Function Block



1.5 Board dimensions



Installations

This chapter provides information on how to use the jumps and connectors on V270Motherboard.

The Sections include:

- Memory Module Installation
- I / O Equipment Installation
- Setting the Jumpers
- Connectors on V270Motherboard

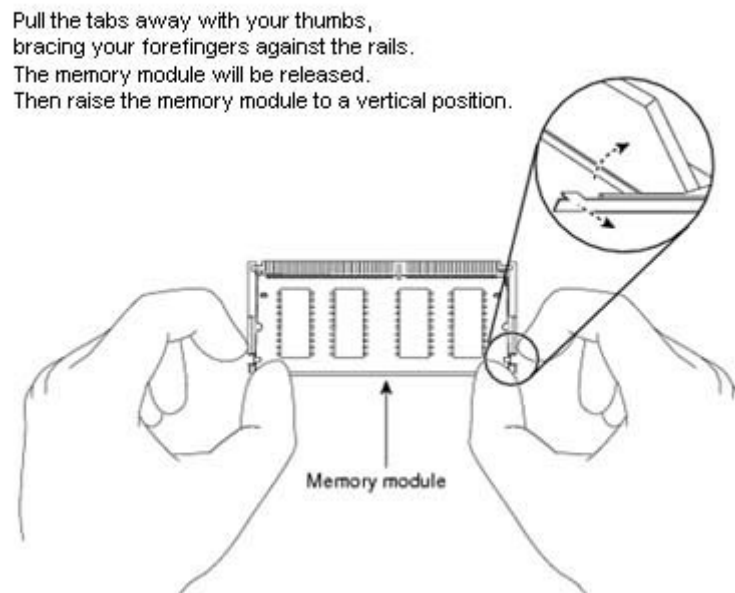
Chapter 2 Installations

2.1 Memory Module (SODIMM) Installation

The V270 Motherboard provides one 200-pin SODIMM slot. The socket supports up to 2GB DDR2 533 SDRAM. When installing the Memory device, please follow the steps below :

Step.1. Firmly inserts the SODIMM at an angle into its slot. Align the SODIMM on the slot such that the notch on the SODIMM matches the break on the slot.

Step.2. Press downwards on SODIMM until the retaining clips at both ends fully snap back in place and the SODIMM is properly seated.



➤ **Caution!**



The SODIMM only fits in one correct orientation. It will cause permanent damage to the development board and the SODIMM if the SODIMM is forced into the slot at the incorrect orientation.

2.2 I/O Equipment Installation

2.2.1 12V DC-IN

The Motherboard allows plugging 12V DC-IN jack on the board without another power module converter under power consumption by VIA C7-M NanoBGA2 processor in VX700 chipset.

2.2.2 PS/2 Keyboard and PS/2 Mouse

The Motherboard provides one Mini-DIN connector supports PS/2 interface. Mini-DIN connector supports Keyboard or Mouse. In other cases, especially in embedded applications, a mouse is not used. Therefore, the BIOS standard setup menu allows you to select* “All, But Keyboard” under the “Halt On”. This allows no-keyboard operation in embedded system applications without the system halting under POST.

2.2.3 Serial COM ports

One serial connector build in the rear I/O supports RS232/422/485 selection through jumper setting and three internal RS-232 ports pin-header. When an optional touch-screen is ordered with PPC, serial com port can connect to a serial or an optional touch-screen.

2.2.4 Internal VGA

The Motherboard has one VGA port that can be connected to an external CRT/ LCD monitor. Use VGA cable to connect to an external CRT / LCD monitor, and connect the power cable to the outlet. The VGA connector is a standard 15-pin D-SUB connector.

2.2.5 Ethernet interface

The Motherboard is equipped with one Realtek RTL8110SC chipsets which is fully compliant with the PCI 10/100/1000 Mbps Ethernet protocol compatible. It is supported by major network operating systems. The Ethernet ports provide one standard RJ-45 jacks.

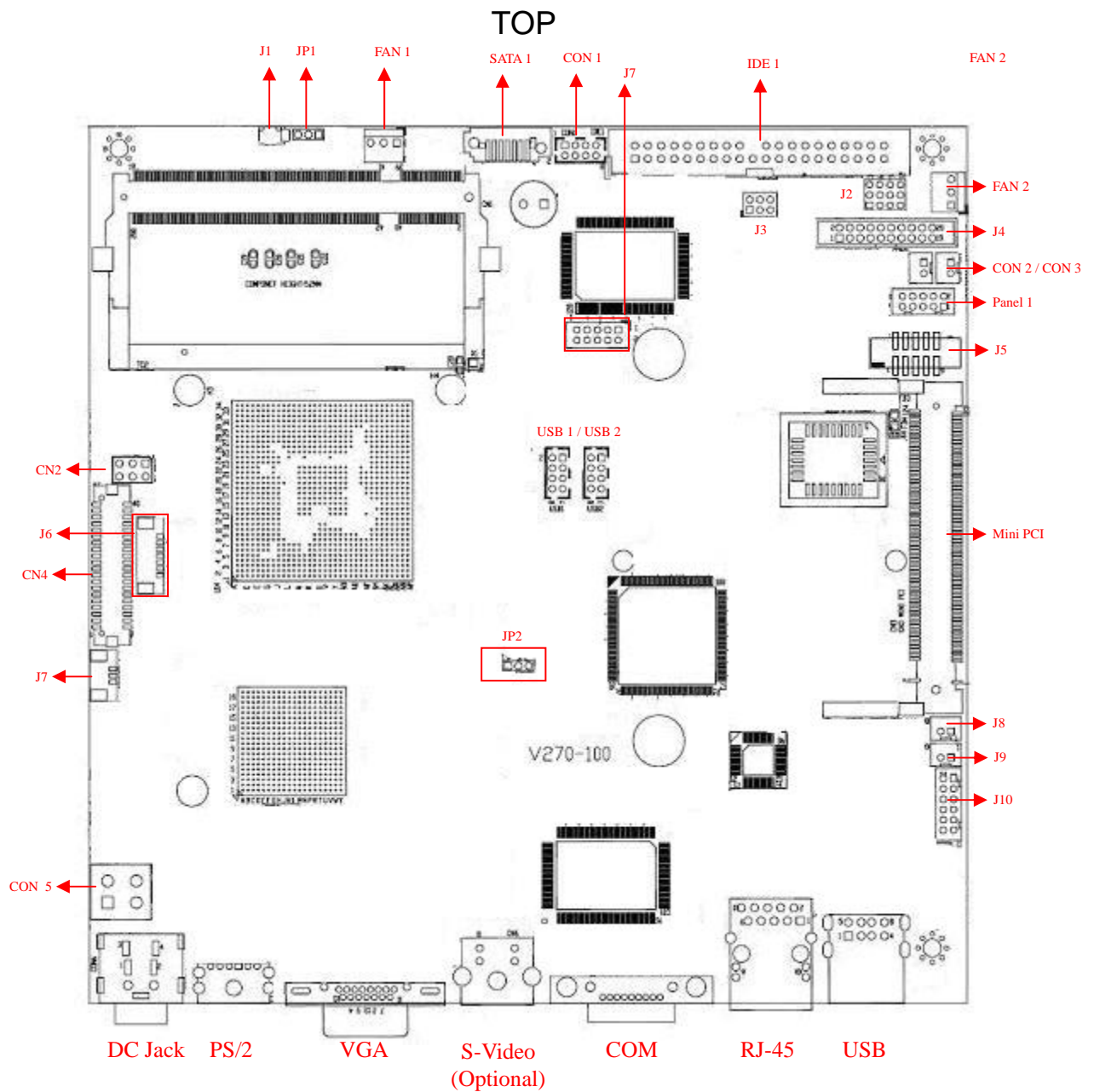
2.2.6 USB ports

Six USB devices (four with pin headers) may be connected to the system though an adapter cable. Various adapters may come with USB ports. USB usually connect the external system to the system. The USB ports support hot plug-in connection. Whatever, you should install the device driver before you use the device.

2.2.7 Audio Jack (Pin-header)

The Audio 7.1 channel capabilities are provided by a VIA VT1708A chipset supporting digital audio outputs. The audio interface includes Mic-in, line-in and line-out.

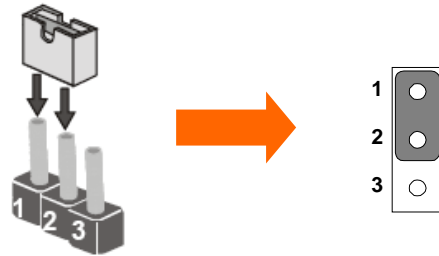
2.3 Jumpers and Connectors



2.4 Jumper Setting

A pair of needle-nose pliers may be helpful when working with jumpers. If you have any doubts about the best hardware configuration for your application, contact your local distributor or sales representative before you make any changes. Generally, you simply need a standard cable to make most connections.

The jumper setting diagram is as below. If a jumper shorts pin 1 and pin 2, the setting diagram is shown as the right one.



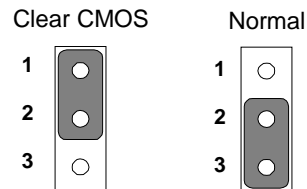
The following tables list the function of each of the board's jumpers.

Label	Function	Note
JP1	Clear CMOS	3x1 header , pitch 2.0mm
JP2	LVDS / DVI Selector	3x1 header , pitch 2.0mm
J2	RS232 / RS422 / RS485 Selector	3x4 header , pitch 2.0mm
J3	RS232 / RS422 / RS485 Selector	3x2 header , pitch 2.0mm
CN2	Panel Voltage Selector	2x3 header , pitch 2.0mm

2.4.1 JP1: Clear CMOS

User must make sure the power supply to turn off the power supply before setting Clear CMOS. Users remember to setting jumper back to Normal before turning on the power supply.

Default: 2 short 3.

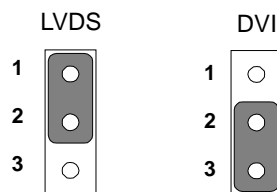


Pin No.	Functions
1 Short 2	Clear CMOS
2 Short 3	Normal

2.4.2 JP2: LVDS / DVI Selector

The jumper can select CN4 connector providing LVDS or DVI signal.

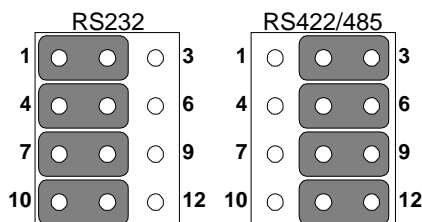
Default: 1 short 2.



Pin No.	Functions
1 Short 2	LVDS
2 Short 3	DVI

2.4.3 J2: RS232 / RS422 / RS485 Selector

The jumper can be configured to operate COM1 in RS-232/422/485 mode. And the setting must be cooperated with J3 settings.

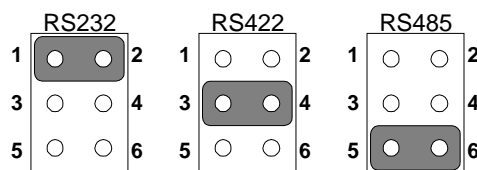


RS232	RS422/485
1-2	2-3
4-5	5-6
7-8	8-9
10-11	11-12

2.4.4 J3: COM1 RS232 / RS422 / RS485 Function Selector

The jumper can be configured to operate COM1 in RS-232/422/485 mode. And the setting must be cooperated with the 2.4.3 settings.

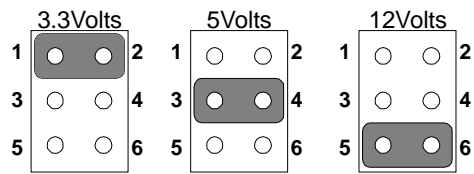
Default 1 short 2.



Pin No.	Functions
1 Short 2	RS232
3 Short 4	RS422
5 Short 6	RS485

2.4.5 CN2: Panel Voltage Select

CN2 can be configured to operate in 3.3Volts / 5Volts / 12Volts mode.



Pin No.	Functions
1 Short 2	3.3Volts Selected
3 Short 4	5Volts Selected
5 Short 6	12Volts Selected

2.5 Connectors and Pin Assignment

The table below lists the function of each of the board's connectors.

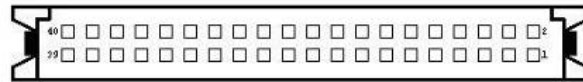
■ Rear I/O connectors:

Label	Function	Note
CON6	12V DC Jack	4x1 Pin Jack
PSKBM1	PS2 Keyboard/Mouse Connector	PS/2 Conn.
CN8	VGA Output Connector	D-sub 15pin VGA
CN6	S-Video	
CN7	RS-232/422/485 Connector	D-sub 9pin COM
LAN1	RJ-45 Connector	RJ-45 Giga LAN
J11	Dual USB Connector	USB 2.0

■ Internal I/O Pin-headers:

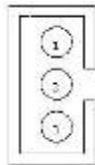
Label	Function	Note
CN4	LVDS LCD Output Connector	DF13-40DP-1.25V
J7	Backlight Brightness Control	3x1 header, pitch 2.54mm
J6	Inverter Connector	7x1 header, pitch 2.54mm
J4	COM2/COM3 Serial Port	2x10 header, pitch 2.0mm
J5	COM4 Serial Port	2x5 header, pitch 2.0mm
IDE2	IDE Connector	40Pin IDE Conn.
SATA1	SATA Connector	SATA Conn.
USB1	USB 3/USB 4	4x2 header, pitch 2.0 mm
USB2	USB 5/USB 6	4x2 header, pitch 2.0 mm
FAN1	FAN Connector	3x1 header, pitch 2.54mm
FAN1	FAN Connector	1x3 header, pitch 2.54mm
PANEL1	System Function Connector	2x5 header ,pitch 2.0mm
J8	Front Audio (Right)	1x2 header ,pitch 2.54mm
J9	Front Audio (Left)	1x2 header ,pitch 2.54mm
CON2	12V External Power	2x1 header, pitch 2.54mm
CON3	5V External Power	2x1 header, pitch 2.54mm
CON1	5V/12V External Power	4x2 header ,pitch 2.54mm
J10	Audio Function Connector	6x2 header ,pitch 2.0mm
CON4	Digital I/O	2x5 header ,pitch 2.0mm
CON5	12V DC Jack	4 Pin Jack

2.5.1 CN4: LVDS Connector



Pin No.	SYMBOL	Pin No.	SYMBOL
1	LCDVDD	2	LVDS_LTX0-
3	LCDVDD	4	LVDS_LTX0+
5	LCDVDD	6	LVDS_LTX1-
7	GND	8	LVDS_LTX1+
9	GND	10	LVDS_LTX2-
11	GND	12	LVDS_LTX2+
13	GND	14	LVDS_LCLK-
15	GND	16	LCDS_LCLK
17	GND	18	NC
19	GND	20	NC
21	GND	22	LVDS_UTX0-
23	GND	24	LVDS_UTX0+
25	GND	26	LVDS_UTX1-
27	GND	28	LVDS_UTX1+
29	GND	30	LVDS_UTX2-
31	GND	32	LVDS_UTX2+
33	GND	34	LVDS_UCLK-
35	GND	36	LVDS_UCLK
37	GND	38	NC
39	GND	40	NC

2.5.2 J7: Digital Panel Backlight Brightness Control



Pin No.	SYMBOL
1	VCC
2	Black Light Control
3	GND

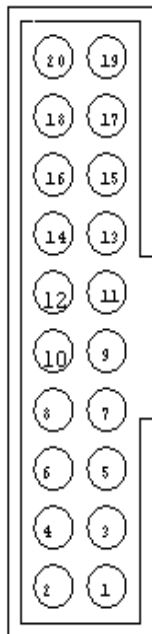
2.5.3 J6: Inverter Power connector



Pin No.	SYMBOL
1	+12V
2	+12V
3	+12V
4	GND
5	Black Light Control
6	GND
7	Black Light EN 5V

2.5.4 J4: COM2/COM3 serial Ports

The J4 serial port, which provides dual RS-232 function.



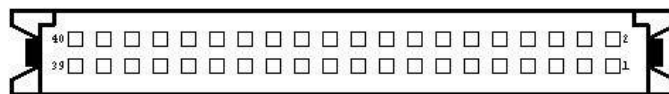
Pin No.	SYMBOL	Pin No.	SYMBOL
20	GND	19	GND
18	FK NRI2	17	FK NDTR2
16	FK NCTS2	15	FK NSOUT2
14	FK NRTS2	13	FK NSIN2
12	FK NDSR2	11	FK NDCD2
10	GND	9	GND
8	FK NRI1	7	FK NDTR1
6	FK NCTS1	5	FK NSOUT1
4	FK NRTS1	3	FK NSIN1
2	FK NDSR1	1	FK NDCD1

2.5.5 J5: COM4 Serial port

The J5 serial port, which provides one RS-232 function.

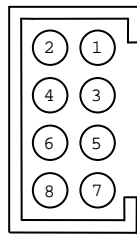
2	1	Pin	SYMBOL	Pin	SYMBOL
4	3	2	NDSR1A	1	NDCD1A
6	5	4	NRTS1A	3	NRXD1A
8	7	6	NCTS1A	5	NTXD1A
10	9	8	NR1A	7	NDTR1A
		10	GND	9	GND

2.5.6 IDE1: 40 pins IDE Connector



Signal Name	Pin #	Pin #	Signal Name
Reset IDE	1	2	Ground
Host data 7	3	4	Host data 8
Host data 6	5	6	Host data 9
Host data 5	7	8	Host data 10
Host data 4	9	10	Host data 11
Host data 3	11	12	Host data 12
Host data 2	13	14	Host data 13
Host data 1	15	16	Host data 14
Host data 0	17	18	Host data 15
Ground	19	20	Protect pin
DRQ0	21	22	Ground
Host IOW	23	24	Ground
Host IOR	25	26	Ground
IOCHRDY	27	28	Host ALE
DACK0	29	30	Ground
IRQ14	31	32	No connect
Address 1	33	34	No connect
Address 0	35	36	Address 2
Chip select 0	37	38	Chip select 1
Activity	39	40	Ground

2.5.7 USB1 / USB2: USB PIN HEADER



USB1 / USB2			
Pin	SYMBOL	Pin	SYMBOL
2	USBVCC	1	USBVCC
4	USB_P6-	3	USB_P7-
6	USB_P6+	5	USB_P7+
8	GND	7	GND

2.5.8 FAN1/ FAN2: FAN CONNECTOR

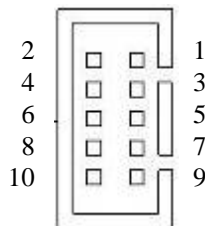


FAN1



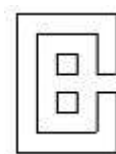
FAN2

2.5.9 PANEL1: Front Panel System Function Connector

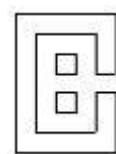


Pin	SYMBOL	Pin	SYMBOL
2	HD_LED+	1	PW_LED+
4	HD_LED-	3	PW_LED-
6	RT_BT1	5	PW_BT1
8	RT_BT2	7	PW_BT2
10	5VSB	9	RSEV

2.5.10 J8/J9: Front Audio

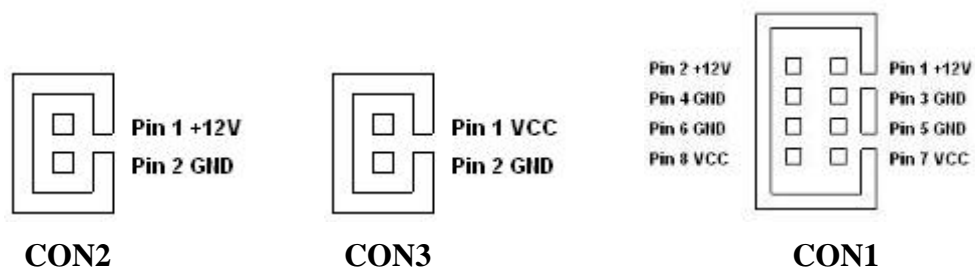


J8

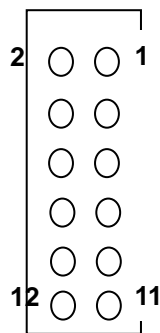


J9

2.5.11 CON2/CON3/CON1: External Power

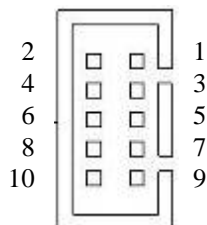


2.5.12 J10: Audio Connector



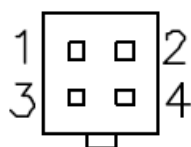
Pin	SYMBOL	Pin	SYMBOL
2	GND	1	Mic in L
4	GND	3	Mic in R
6	Mic in Sensor	5	Line out R
8	Line in Sensor	7	Front IO Sensor
10	Line out Sensor	9	Line out L
12	Line in L	11	Line in R

2.5.13 CON4: Digital: Digital I/O Connector



Pin	SYMBOL	Pin	SYMBOL
2	Vcc	1	GND
4	Out1	3	Out3
6	Out0	5	Out2
8	IN1	7	IN3
10	IN0	9	IN2

2.5.14 ATX12V1: 12V DC Connector



Pin	SYMBOL
1	Ground
2	Ground
3	+12V
4	+12V

Graphic Driver Installation

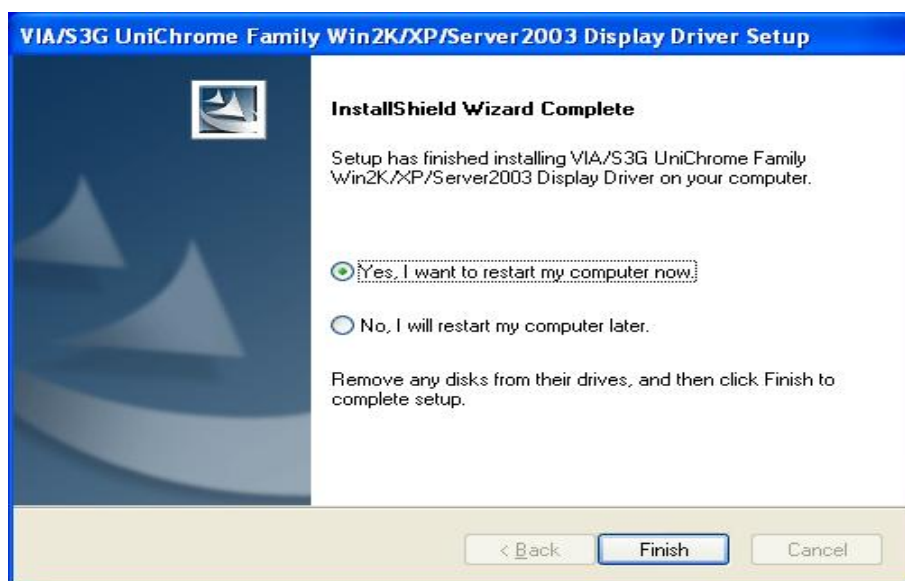
This chapter offers information on the chipset software Installation utility

- Installation of Graphic Driver
- Panel Resolution Setting

Step.3. It will be auto-install Graphic Driver.



Step.4. Click on “Finish” to install Driver.



CHAPTER 4

Chipset Driver Installation

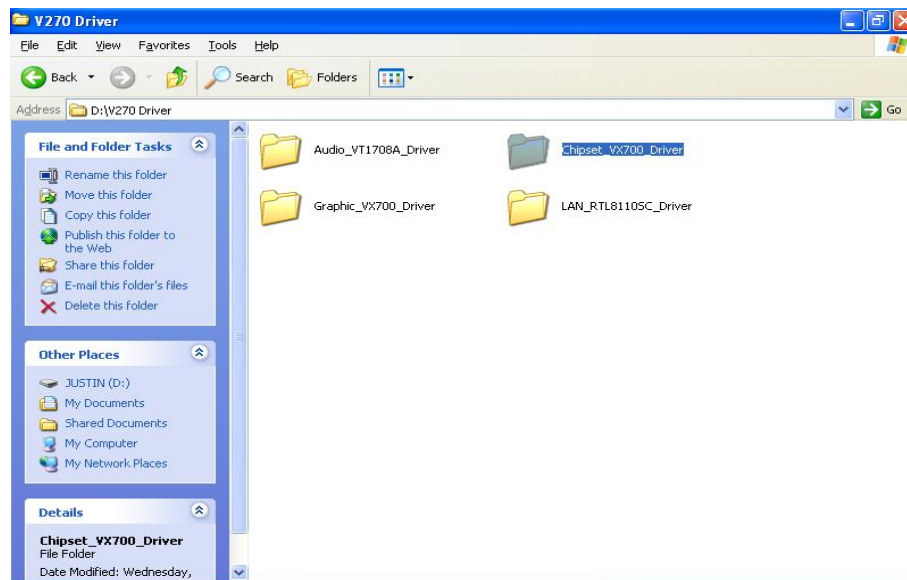
This chapter offers information on the chipset software Installation utility

- Installation of Chipset Driver
- Further information

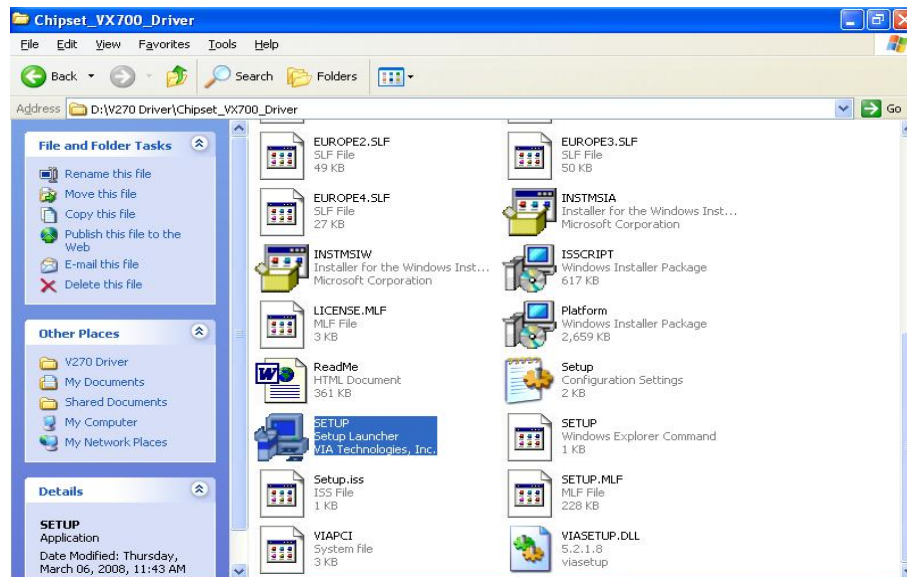
Chapter 4 Chipset Driver Installation

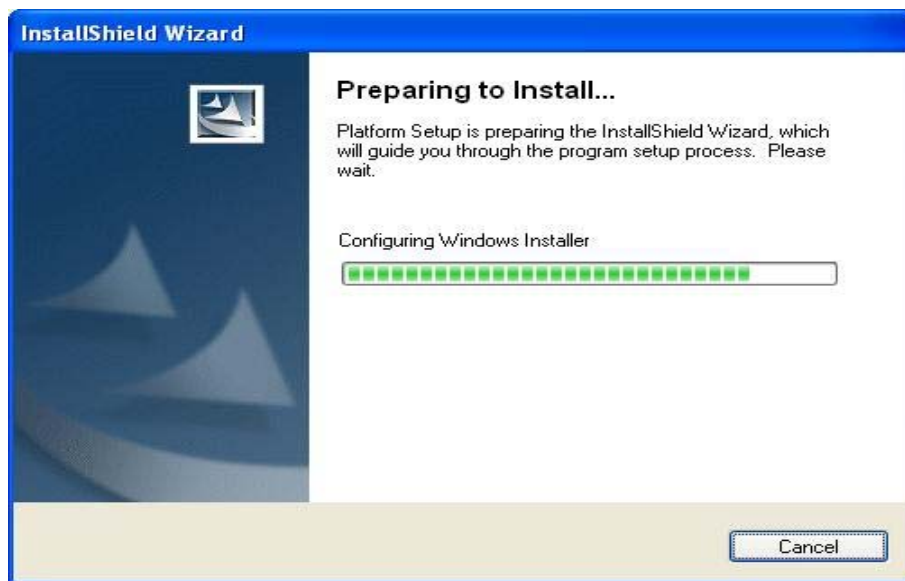
4.1 Chipset Driver Installation

Setp.1. Insert the CD that comes with the motherboard. Open the file document “Chipset_VX700_Driver”.

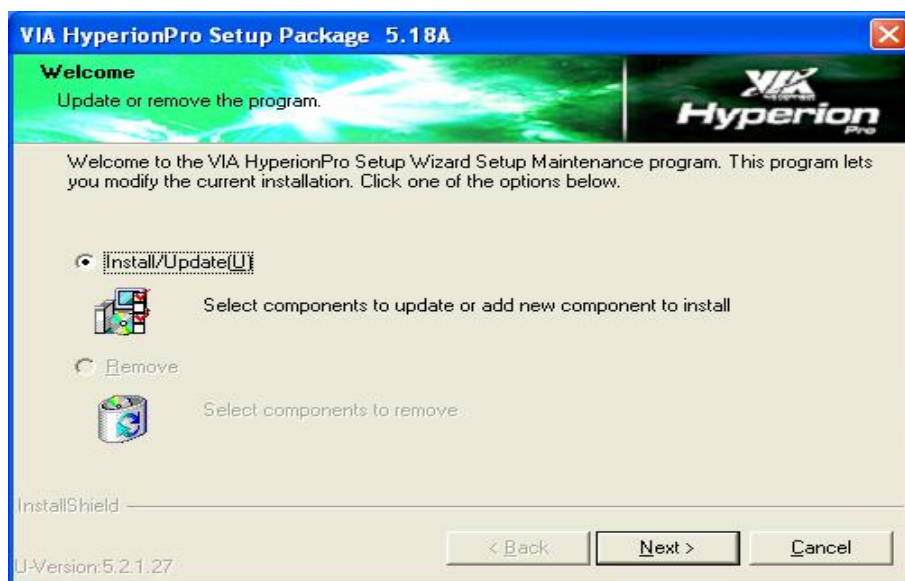


Setp.2. Click on “Setup” to install driver.

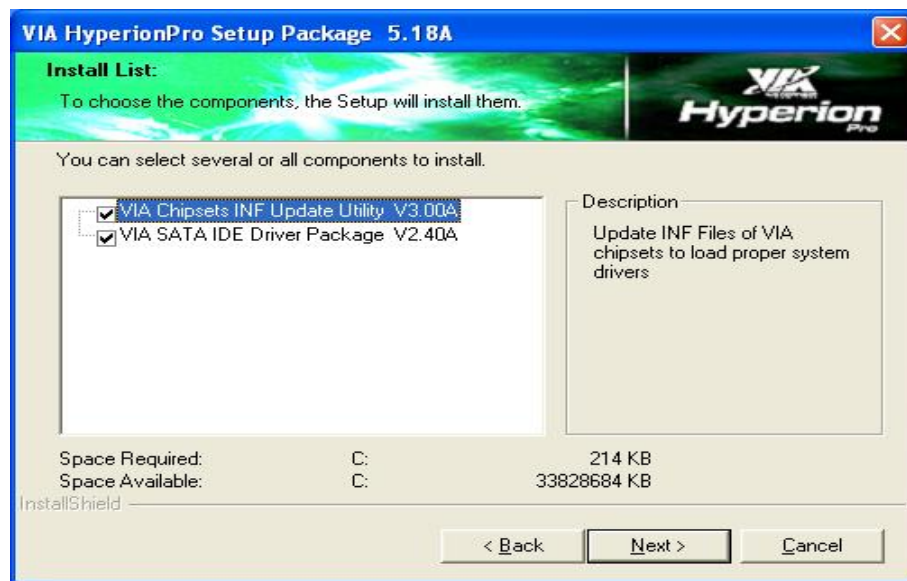




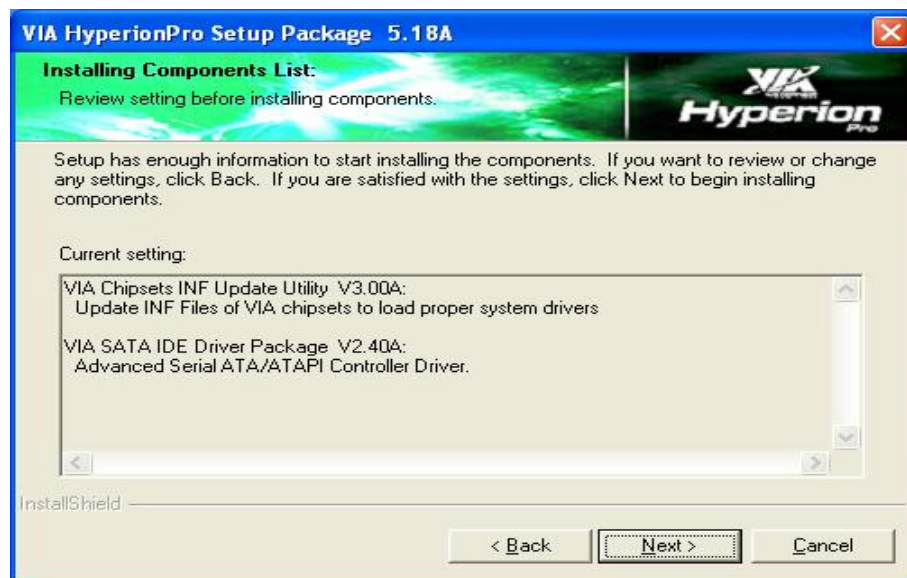
Step.3. Click on “Next” to install driver.



Setp.4. Click on “Next” to install driver.



Setp.5. Click on “Next” to install driver.



Step.6. Click on “Yes, I want to restart this computer now” to go on.



CHAPTER 5

Ethernet Driver Installation

This chapter offers information on the Ethernet software installation utility.

Sections include:

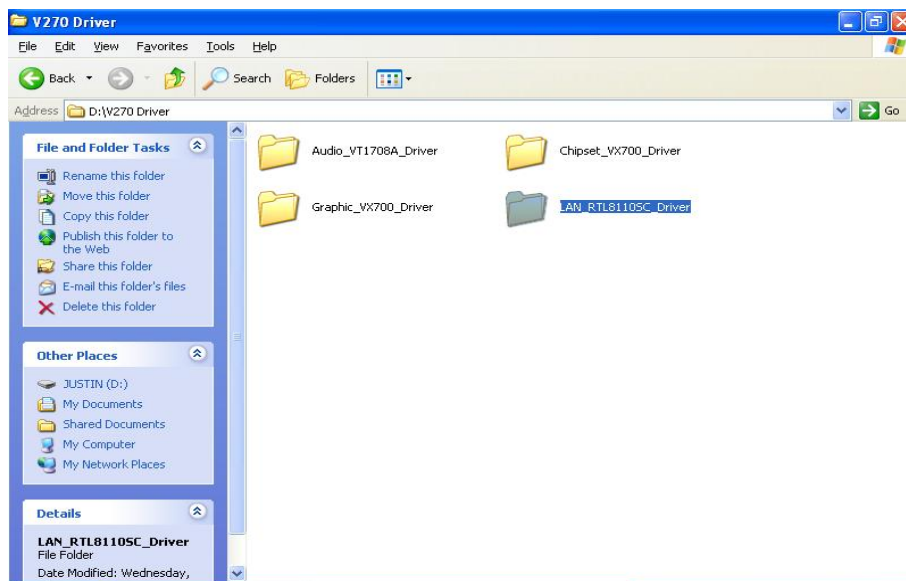
- Introduction
- Installation of Ethernet Driver

Chapter 5 Ethernet Driver Installation

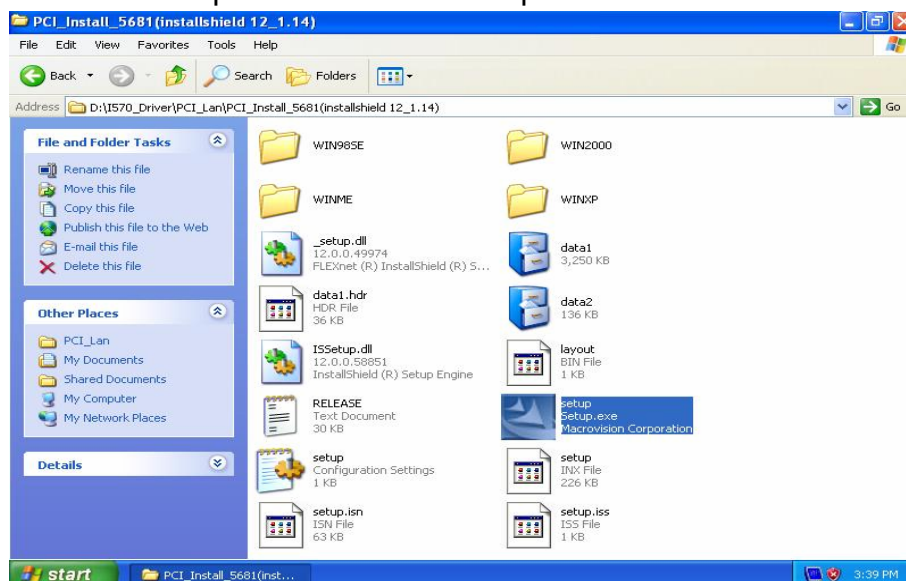
5.1 Installation of Ethernet Driver

The Users must make sure which operating system you are using in the V270Motherboard before installing the Ethernet drivers. Follow the steps below to complete the installation of the Realtek RTL8110SC LAN drivers. You will quickly complete the installation.

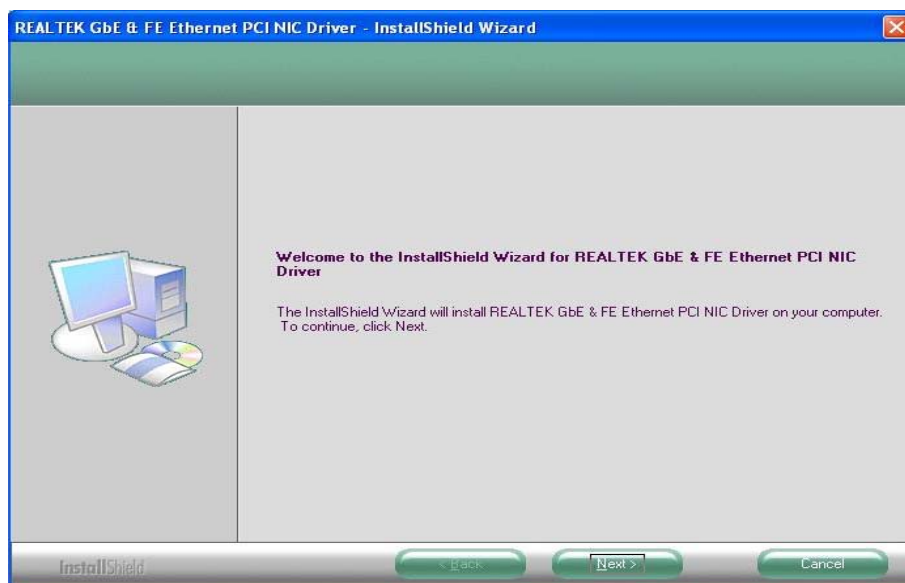
Step.1. Insert the CD that comes with the motherboard. Open the file document “LAN Driver”.



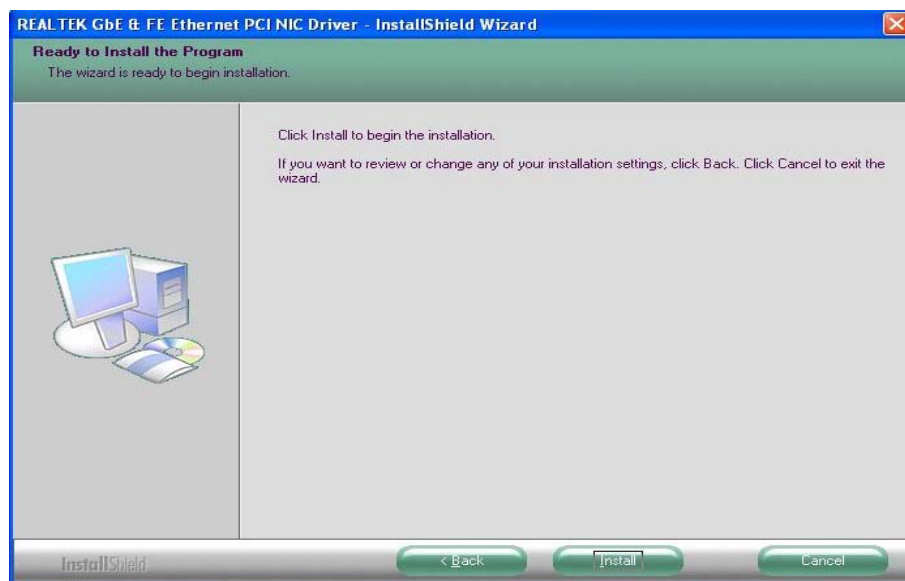
Step.2 Click on “Setup” to execute the setup.



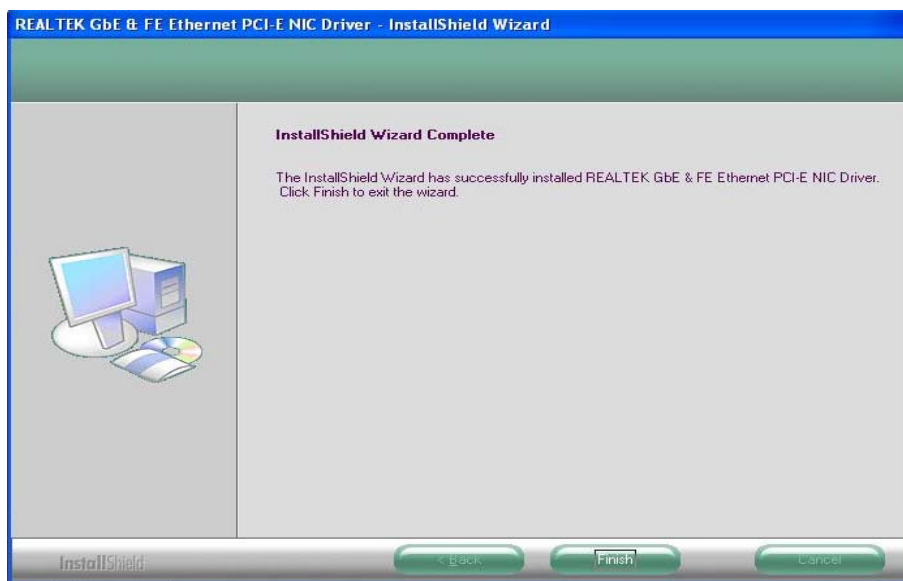
Step.3. Click on “Next” to install driver.



Step.3. Click on “Install” to install driver.



Setp.3. Click on “Finish” and go on.



Audio Driver Installation

This chapter offers information on the Audio software installation utility.

Sections include:

- Introduction
- Installation of Audio Driver

Chapter 6 Audio Driver Installation

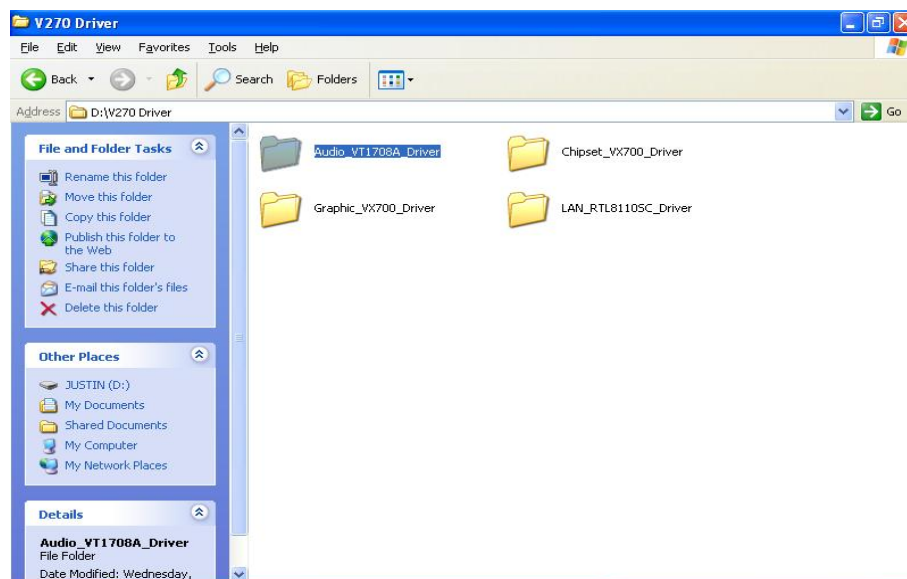
6.1 Introduction

The V270Motherboard is equipped with the VIA Vinyl VT1708 chipset. The VIA VT1708 series deliver top quality audio performance, supporting the latest 8-channel, 24-bit, 192KHz audio content for an all-round high fidelity experience.

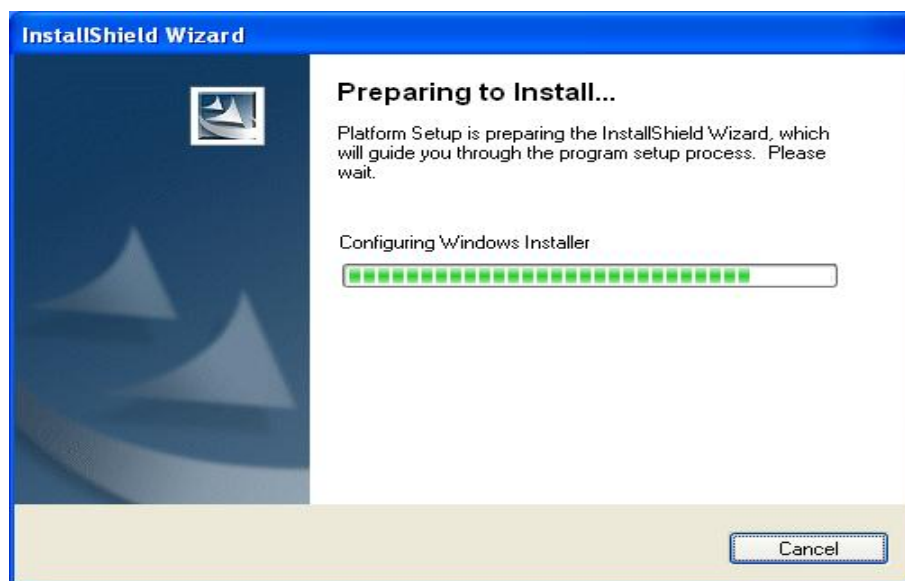
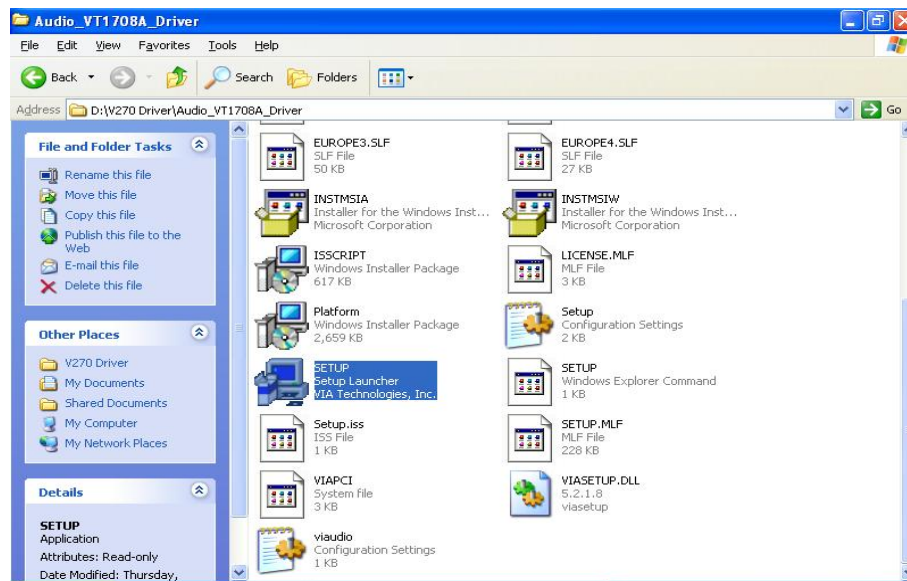
6.2 Installation of Audio Driver

The users must make sure which operating system you are using in the V270 Motherboard before installing the Audio drivers. Follow the steps below to complete the installation of the VIA Vinyl VT1708 Audio drivers. You will quickly complete the installation.

Step.1. Insert the CD that comes with the motherboard. Open the file document “Audio_VT708A_Driver” to execute the setup.



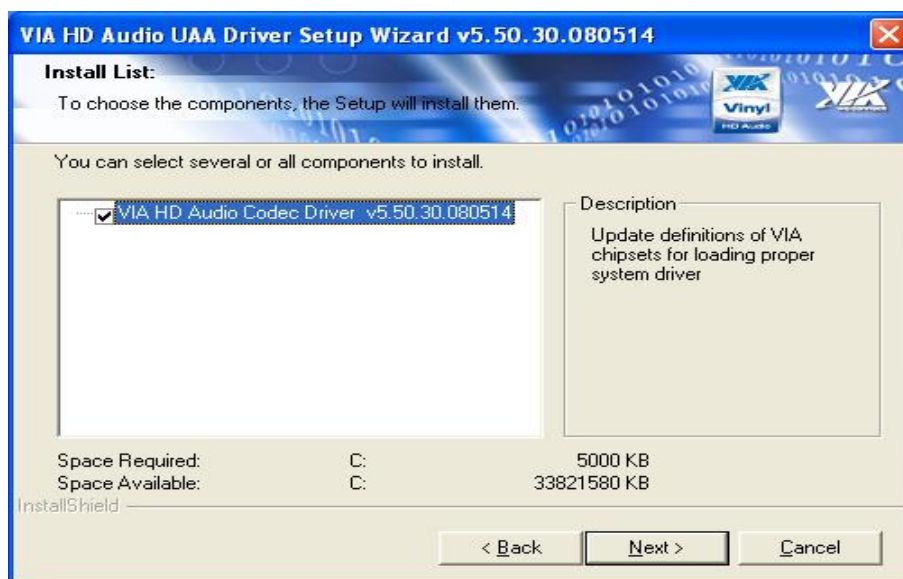
Step.2. Click on “Setup” to execute the setup



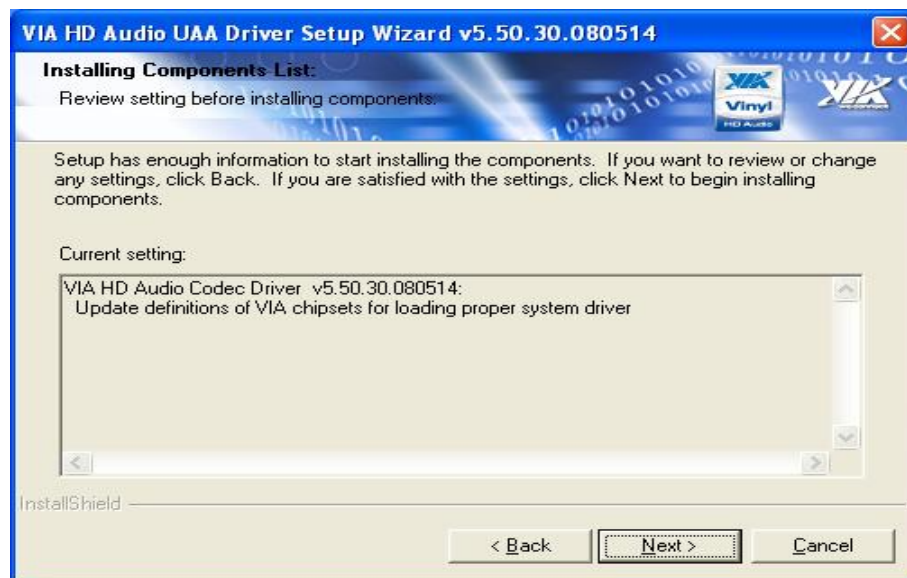
Step.3. Click on “Next” to install driver.



Step.4. Click on “Next” to install driver.



Step.5. Click on “Next” to install driver.



Step.6. Click on “Yes, I want to restart this computer now” to go on.



AMI BIOS Installation

This chapter describes the different settings available in the AMI BIOS that comes with the board. This chapter offers information on the AMI BIOS installation utility. Sections include:

- BIOS Introduction
- BIOS Setup
- Standard CMOS Setup
- Advanced BIOS Features
- Advanced Chipset Features
- Integrated Peripherals
- Power Management Setup
- PC Health Status
- Load Fail-Safe Defaults
- Load Optimized Defaults
- Set Supervisor/User Password
- Save & Exit Setup
- Exit Without Saving

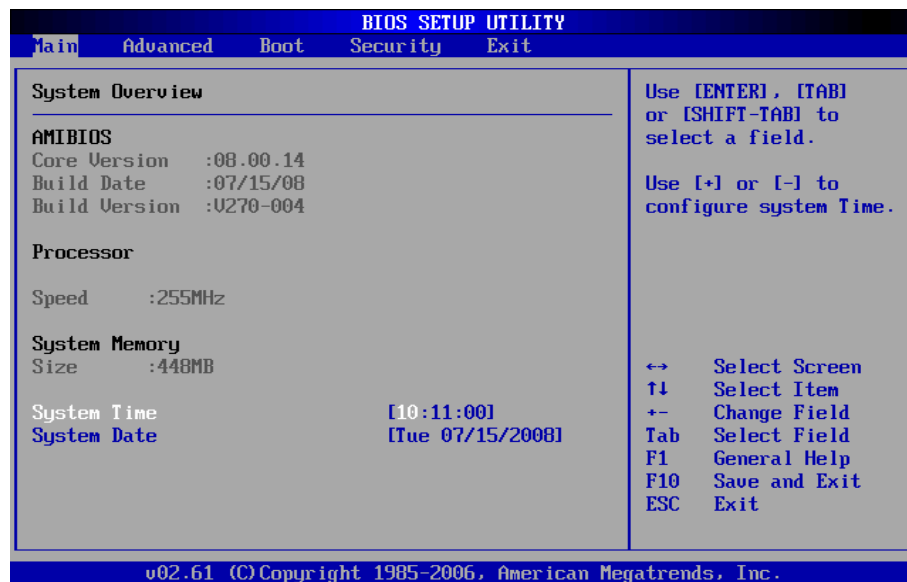
Chapter 7 AMI BIOS Installation

7.1 BIOS Introduction

AMI BIOS (Basic Input/Output System) installed in your computer system's ROM supports Intel processors. The BIOS provides critical low-level support for a standard device such as disk drives, serial ports and parallel ports. It also adds virus and password protection as well as special support for detailed fine-tuning of the chipset controlling the entire system.

7.2 BIOS Setup

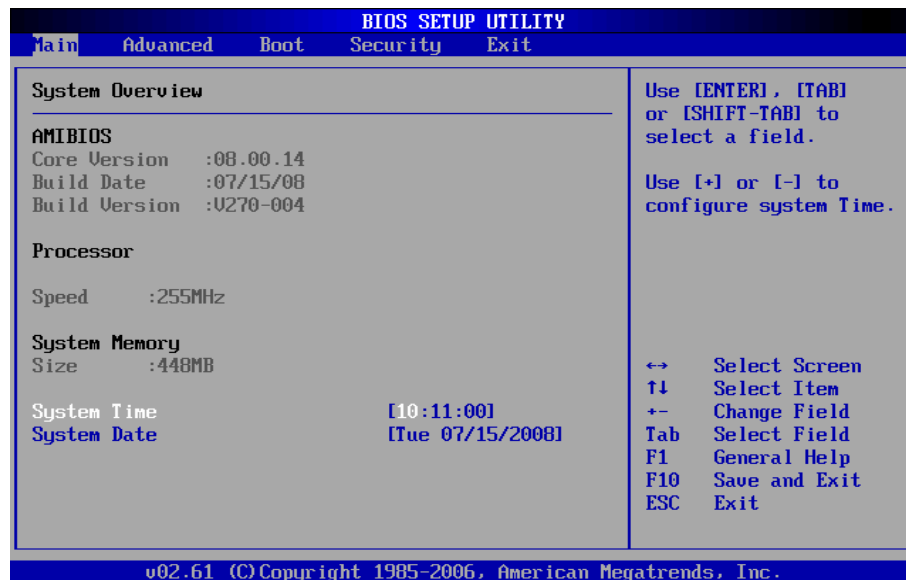
The Main BIOS setup menu screen has two main frames. The left frame displays all the options that can be configured. "Grayed-out" options cannot be configured. Options in blue can be. The right frame displays the key legend. Above the key legend is an area reserved for a text message. When an option is selected in the left frame, it is highlighted in white. Often a text message will accompany it.



The BIOS setup/utility uses a key-based navigation system called hot keys. Most of the BIOS setup utility hot keys can be used at any time during the setup navigation process. These keys include <F1>, <F10>, <Enter>, <ESC>, <Arrow> keys, and so on.

7.3 Main Setup

When you first enter the Setup Utility, you will enter the Main setup screen. You can always return to the Main setup screen by selecting the Main tab. There are two Main Setup options. They are described in this section. The Main BIOS Setup screen is shown below.



✓ System Time/System Date

Use this option to change the system time and date. Highlight System Time or System Date using the <Arrow> keys. Enter new values through the keyboard. Press the <Tab> key or the <Arrow> keys to move between fields. The date must be entered in MM/DD/YY format. The time is entered in HH:MM:SS format.

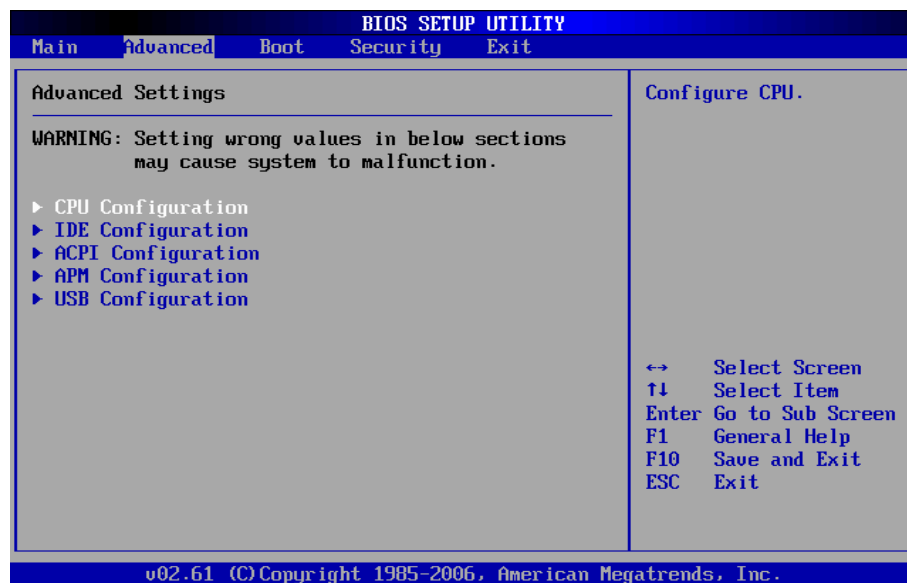
Note: The time is in 24-hour format. For example, 5:30 A.M. appears as 05:30:00, and 5:30 P.M. as 17:30:00.

7.4 Advanced BIOS Setup

Select the Advanced tab from the setup screen to enter the Advanced BIOS Setup screen.

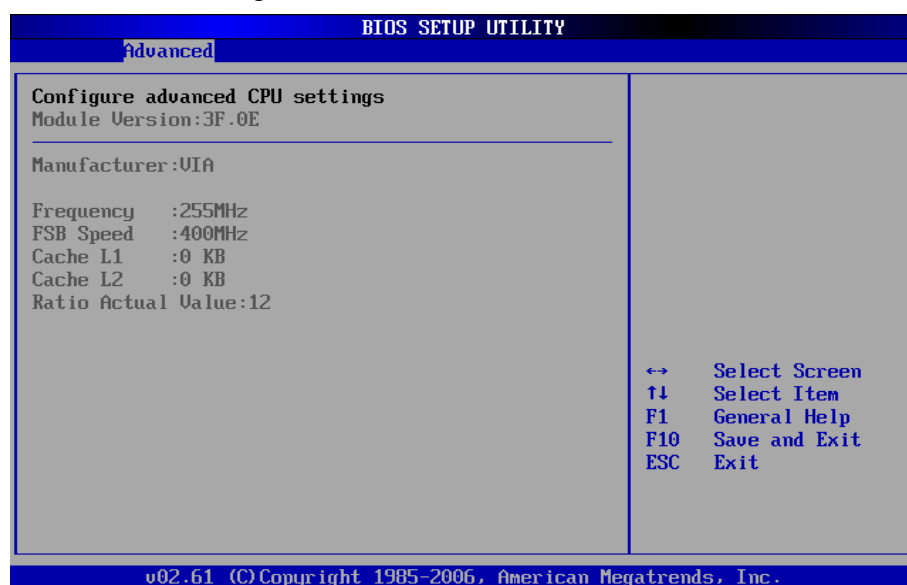
You can select any of the items in the left frame of the screen, such as CPU Configuration, to go to the sub menu for that item. You can display an Advanced BIOS Setup option by highlighting it using the <Arrow> keys. All Advanced BIOS Setup options are described in this section. The Advanced BIOS Setup screen is shown below.

The sub menus are described on the following pages.



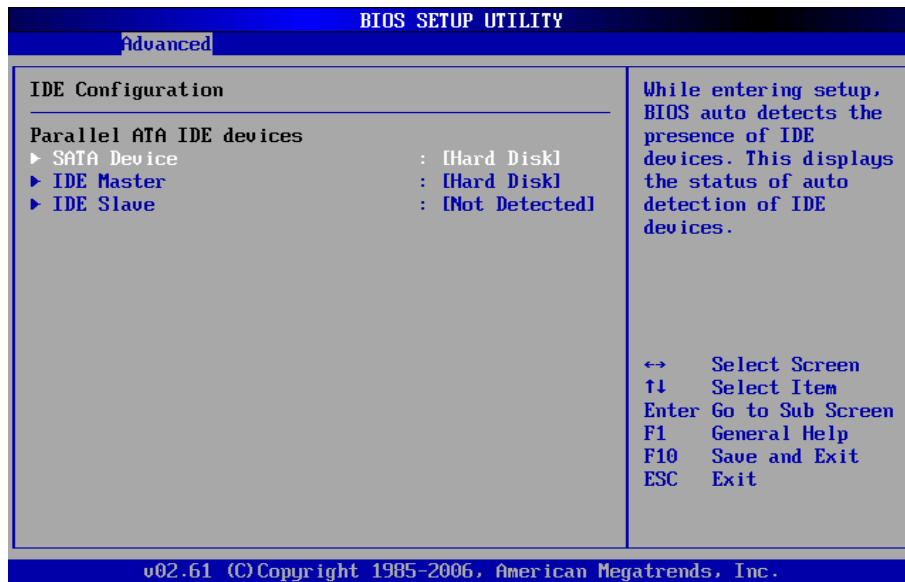
✓ CPU Configuration

You can use this screen to show the information for processor detail specifications. An example of the CPU Configuration screen is shown below.



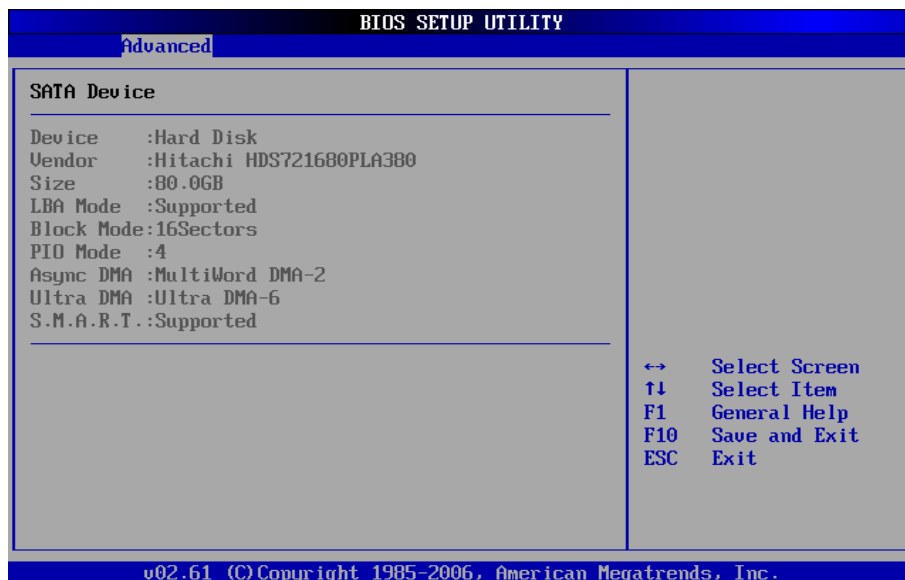
✓ IDE Configuration Settings

You can use this screen to select options for the IDE Configuration Settings. Use the up and down <Arrow> keys to select an item. Use the <Plus> and <Minus> keys to change the value of the selected option. A description of the selected item appears on the right side of the screen. The settings are described on the following pages. An example of the IDE Configuration screen is shown below.



■ SATA Device, IDE Master, IDE Slave

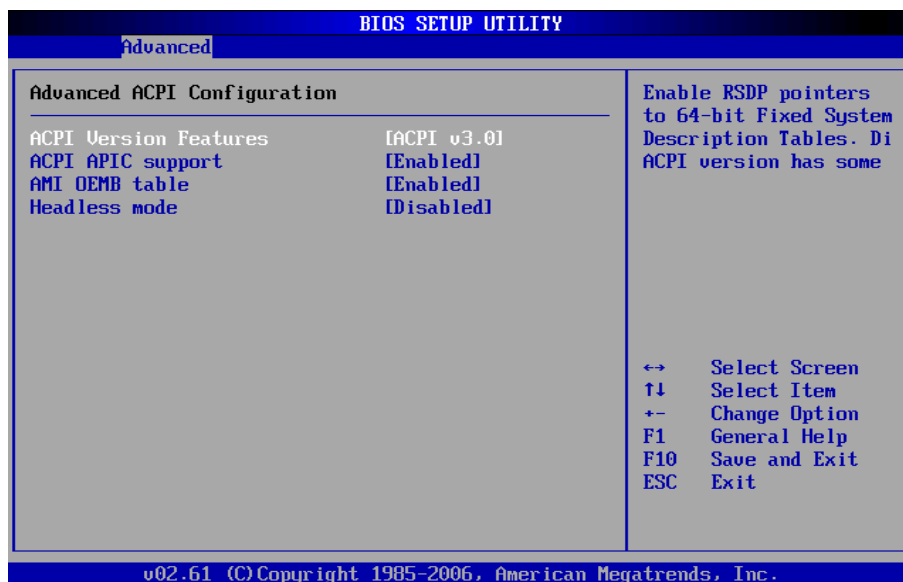
Select one of the hard disk drives to configure it. Press <Enter> to access its' the sub menu. The options on the sub menu are described in the following sections.



✓ APM Configuration

You can use this screen to select options for the ACPI Advanced Configuration Settings.

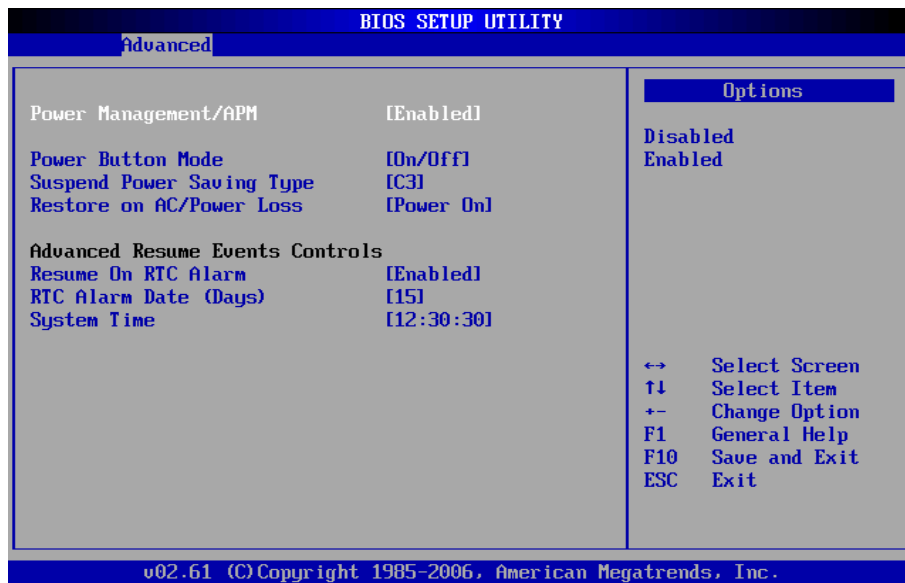
Use the up and down <Arrow> keys to select an item. Use the <Plus> and <Minus> keys to change the value of the selected option. A description of the selected item appears on the right side of the screen. The settings are described on this page. The screen is shown below.



- **ACPI Version Features**
Set this value to allow or prevent the system to be complaint with the ACPI 3.0 specification.
- **ACPI APIC support**
*APIC stands for Advanced Programmable Interrupt Controller.
The default setting is Enabled.*
- **AMI OEMB table**
*Set this value to allow the ACPI BIOS to add a pointer to an OEMB table in the Root System Description Table (RSDT) table.
The default setting is Enabled.*
- **Headless mode**
*This option is used to update the ACPI FACP table to indicate headless operations.
The default setting is Disabled.*

✓ APM Configuration

Set this value to allow Power Management/APM support. The Optimal and Fail-Safe default setting is Enabled.



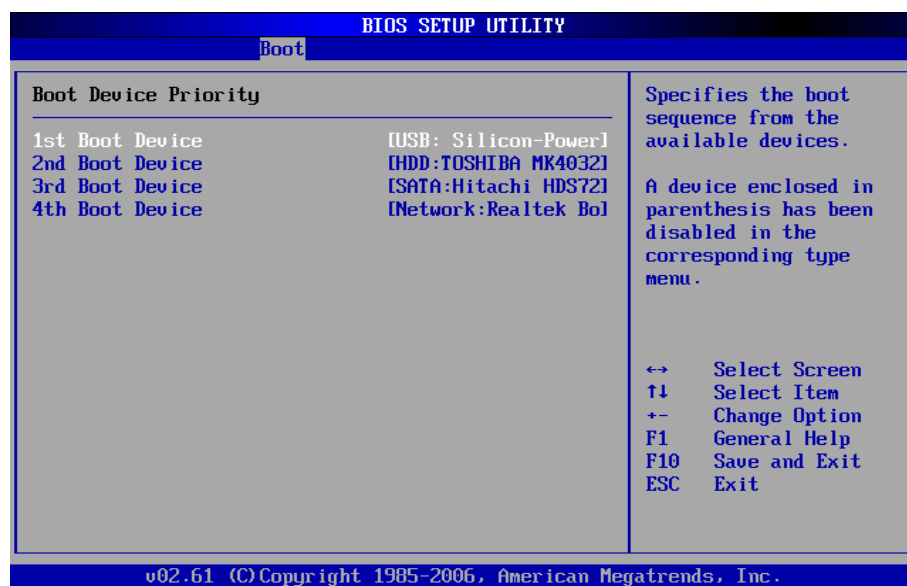
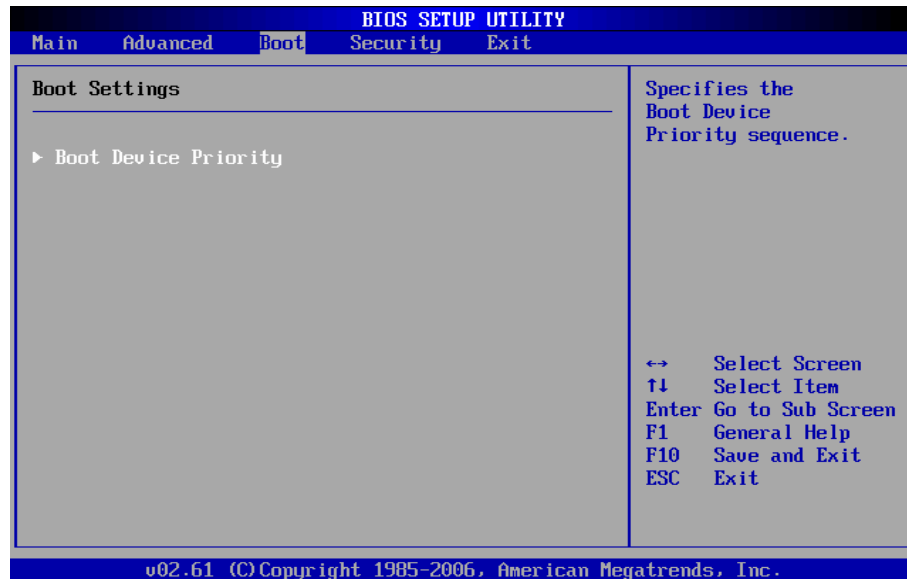
- **Power Button Mode**
This option specifies how the externally mounted power button on the front of the computer chassis is used.
The default setting is On/Off.
- **Suspend Power Saving Type**
Set this value to allow the Suspend Power Saving type to be specified.
The default setting is C3.
- **Restore on AC/Power Loss**
Set the system status after AC power loss.
The default setting is Power on.

Option	Description
Power Off	System always Powers Off
Keep Current	System always Powers On
Last State	System returns to the last state before AC power loss

7.5 Boot Setting

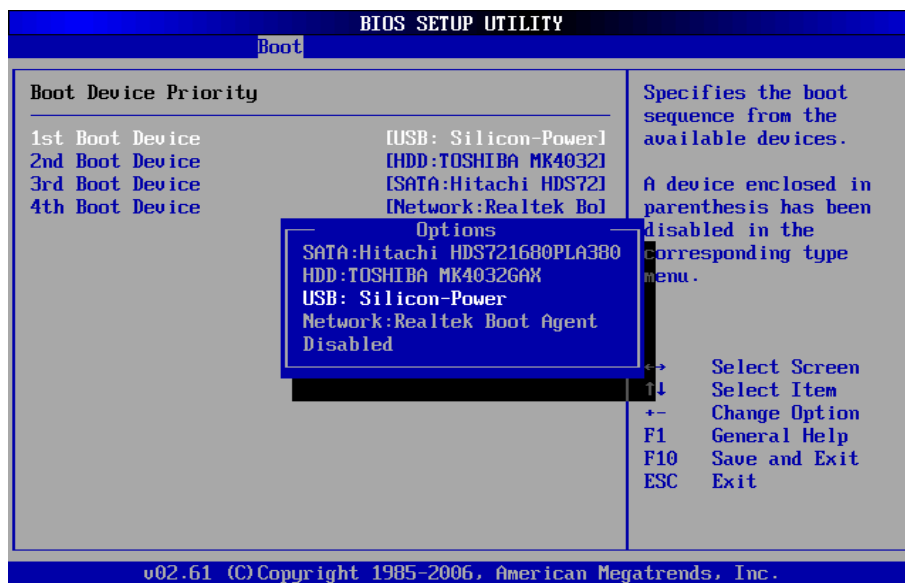
✓ Boot Device Priority

Use this screen to specify the order in which the system checks for the device to boot from. To access this screen, select Boot Device Priority on the Boot Setup screen and press <Enter>. The following screen displays:



■ 1st Boot Device

Set the boot device options to determine the sequence in which the computer checks which device to boot from. The settings are Removable Dev., Hard Drive, or USB-CDROM.



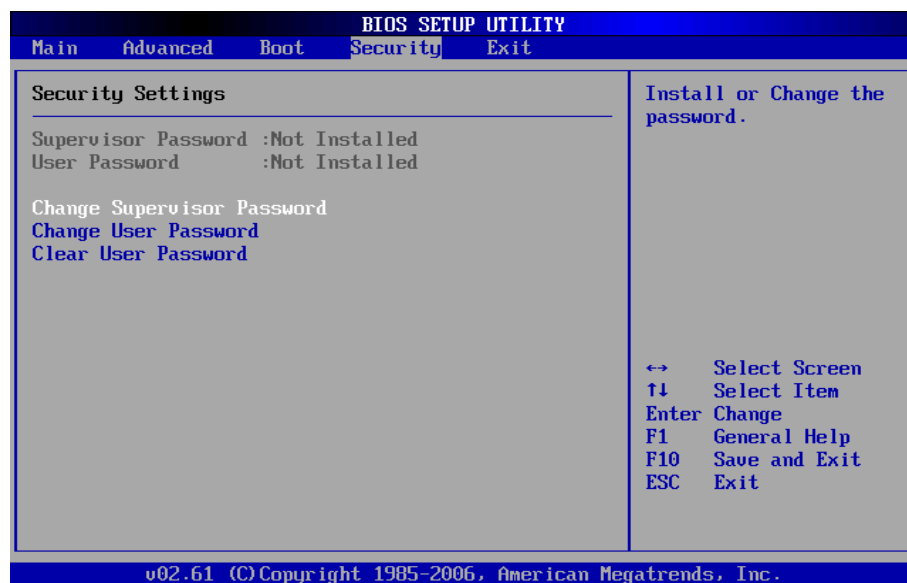
To change the boot order, select a boot category type such as Hard disk drives, USB devices, or SATA devices from the boot menu. For example, if the 1st boot device is set to SATA devices, then BIOS will try to boot to SATA devices first.

Note: When you select a boot category from the boot menu, a list of devices in that category appears. For example, if the system has three hard disk drives connected, then the list will show all three hard disk drives attached.

7.6 Security Setup

Two Levels of Password Protection provides both a Supervisor and a User password. If you use both passwords, the Supervisor password must be set first. The system can be configured so that all users must enter a password every time the system boots or when Setup is executed, using either or either the Supervisor password or User password.

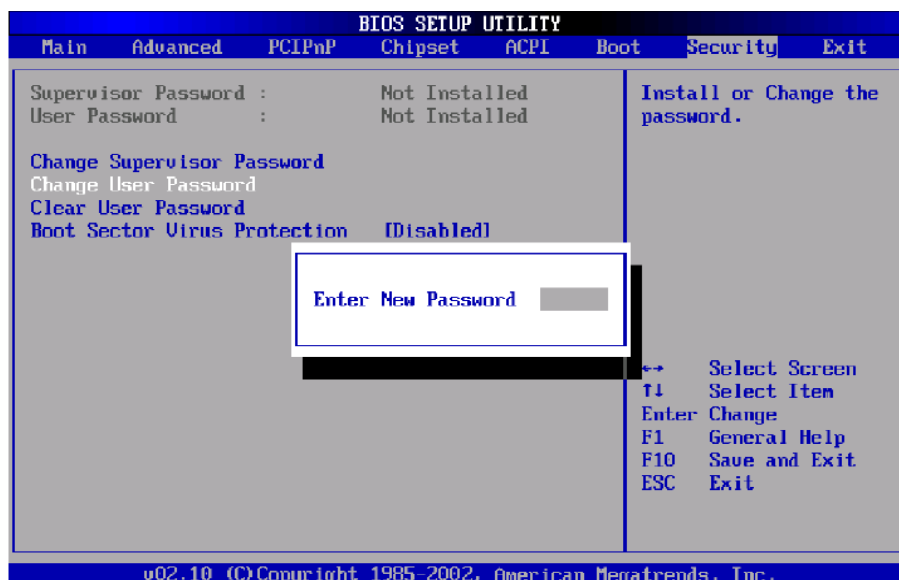
The Supervisor and User passwords activate two different levels of password security. If you select password support, you are prompted for a one to six character password. Type the password on the keyboard. The password does not appear on the screen when typed. Make sure you write it down. If you forget it, you must drain NVRAM and reconfigure.



Select Security Setup from the Setup main BIOS setup menu. All Security Setup options, such as password protection and virus protection, are described in this section. To access the sub menu for the following items, select the item and press <Enter>:

- Change Supervisor Password
- Change User Password
- Clear User Password

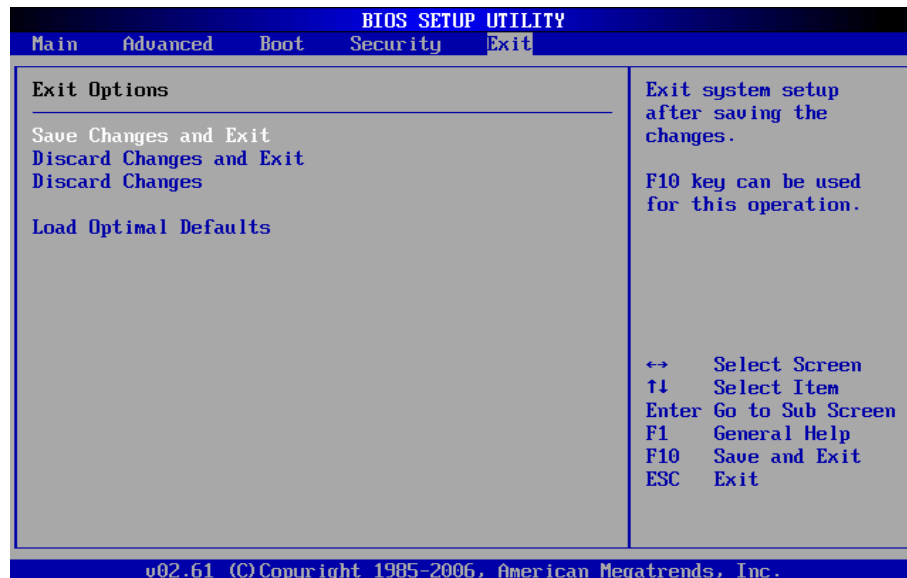
The Security Setup screen is shown below. The sub menus are documented on the following pages.



- **Supervisor Password**
Indicates whether a supervisor password has been set. If the password has been installed, Installed displays. If not, Not Installed displays.
- **User Password**
Indicates whether a user password has been set. If the password has been installed, Installed displays. If not, Not Installed displays.
- **Change Supervisor Password**
Select this option and press <Enter> to access the sub menu. You can use the sub menu to change the supervisor password.
- **Change User Password**
Select this option and press <Enter> to access the sub menu. You can use the sub menu to change the user password.
- **Clear User Password**
Select this option and press <Enter> to access the sub menu. You can use the sub menu to clear the user password.

7.7 Security Setup

Select the Exit tab from the setup screen to enter the Exit BIOS Setup screen. You can display an Exit BIOS Setup option by highlighting it using the <Arrow> keys. All Exit BIOS Setup options are described in this section. The Exit BIOS Setup screen is shown below.



- **Saving Changes and Exit**
When you have completed the system configuration changes, select this option to leave Setup and reboot the computer so the new system configuration parameters can take effect. Select Exit Saving Changes from the Exit menu and press <Enter>.

Save Configuration Changes and Exit Now?

[Ok] [Cancel]

appears in the window. Select Ok to save changes and exit.

- **Discarding Changes and Exit**
Select this option to quit Setup without making any permanent changes to the system configuration. Select Exit Discarding Changes from the Exit menu and press <Enter>.
Discard Changes and Exit Setup Now?
[Ok] [Cancel]
appears in the window. Select Ok to discard changes and exit.

- **Discard Changes**
Select Discard Changes from the Exit menu and press <Enter>.



■ **Load Optimal Defaults**

Automatically sets all Setup options to a complete set of default settings when you select this option. The Optimal settings are designed for maximum system performance, but may not work best for all computer applications. In particular, do not use the Optimal Setup options if your computer is experiencing system configuration problems.

Select Load Optimal Defaults from the Exit menu and press <Enter>.

